

Claims

1. Regulatory device for a pump (2) with adjustable
delivery volume, with a control valve unit (3) to
5 regulate a control pressure acting in a control
pressure chamber (21) of an actuator (4, 5), where the
control valve unit (3) comprises a threshold value
control valve (22) subjected to the pressure of a
delivery-side working line (7), and a delivery flow
10 control valve (23) which is pressurised at a
comparison pressure connection (29) with a consumer
input pressure taken from a consumer supply line (8)
and at a control pressure measurement connection (27)
with a control pressure countering the consumer input
15 pressure, characterised in that a control pressure
supply connection (38) of the delivery flow control
valve (23) can be connected variably by the threshold
value control valve (22) with the delivery-side
working pressure line (7).
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2. Regulatory device according to Claim 1, characterised
in that when the pressure falls below a threshold
value which can be set via the threshold value control
valve (22), the control pressure chamber (21) of the
25 actuator (4, 5) is connected with the tank volume
(13).
3. Regulatory device according to Claim 2, characterised
in that when the threshold value is exceeded, the
30 control pressure chamber (21) of the actuator (4, 5)
can be connected variably with the delivery-side
working line (7) depending on the pressure difference
between the control pressure present at the control

pressure measurement connection (27) and the consumer input pressure.

4. Regulatory device according to any of Claims 1 to 3,
5 characterised in that the control pressure acting in the control pressure chamber (21) of the actuator (4, 5), as the control pressure resetting the delivery volume of the pump (2), acts on a first actuator (4) of the actuator unit (4, 5).

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5. Regulatory device according to Claim 4, characterised in that the actuator unit (4, 5) comprises a second actuator (5) which is pressurised with the pressure of the delivery-side working line (7) and adjusts the
15 pump (2) in the direction of greater delivery volumes.

6. Regulatory device according to any of Claims 1 to 5,
characterised in that the threshold value control valve (22) comprises a threshold value control valve
20 piston (46) loaded with a first spring (24) and the delivery flow control valve (23) comprises a delivery flow control valve piston (47) loaded with a second spring (25), the threshold value control valve piston (46) and the delivery flow control valve piston (47)
25 being arranged in a common control valve block (43), where a first face (64) of the threshold value control valve piston (46) is arranged next to a first pressure chamber (63) which is connected with a delivery pressure chamber (61), and where the delivery pressure
30 chamber (61) can be connected with the control pressure channel (30) via a first control edge (59) formed on the threshold value control valve piston (46).

7. Regulatory device according to Claim 6, characterised in that a second face (66) of the threshold value control valve piston (46) is pressurised in a first spring chamber (73) with the pressure predominating in the first spring chamber (73) and the first spring chamber (73) is connected with the tank volume (13).
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8. Regulatory device according to Claim 6 or 7, characterised in that a first face (82) of the delivery flow control valve piston (47) is pressurised in a second pressure chamber (81) with the pressure predominating in the control pressure channel (30).
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9. Regulatory device according to Claim 8, characterised in that the second face (93) of the delivery flow control valve piston (47) is pressurised in a second spring chamber (96) with the pressure predominating in the second spring chamber (96) and the second spring chamber (96) can be connected with the consumer supply line (8).
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10. Regulatory device according to any of Claims 6 to 9, characterised in that in the control valve block (43) is formed a control pressure channel (85) which is closed with a stopper (90) and in the stopper (90) is provided a connecting opening (89) and an adjustable choke point (88), where via the connecting opening (89) the control pressure channel (85) is connected with a control pressure connection and via the adjustable choke (88) the control pressure channel (85) is connected with the tank volume (13).
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11. Regulatory device according to Claim 10, characterised in that the control pressure connection is formed in a second stopper (90) and the second stopper (90) closes the control pressure channel (30).

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12. Regulatory device according to Claim 10 or 11, characterised in that the control pressure channel (30) opens into a control pressure chamber (53) which can be connected variably with the control pressure channel (85) via a second control edge (51) formed on the delivery flow control valve piston (47).

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13. Regulatory device according to any of Claims 6 to 12, characterised in that the pretension of the first and/or second spring (24, 25, 25') can be adjusted with an adjustment device (72, 95).

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14. Regulatory device according to any of Claims 1 to 13, characterised in that the comparison pressure connection (29) of the delivery flow control valve (23) can be connected via a switch valve (40) with the tank volume (13).

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